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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/567,772	02/09/2006	Masatoshi Kuwajima	4386.77746	5367
24978 7590 11/17/2009 GREER, BURNS & CRAIN 300 S WACKER DR 25TH FLOOR CHICAGO, IL 60606				
EXAMINER				
FISCHER, JUSTIN R				
ART UNIT		PAPER NUMBER		
1791				
MAIL DATE		DELIVERY MODE		
11/17/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/567,772

Applicant(s)

KUWAJIMA, MASATOSHI

Examiner

Justin R. Fischer

Art Unit

1791

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hellweg (US 6,463,974) and further in view of Schubert (US 2384402).

Hellweg teaches a wheel assembly having a runflat support member formed of an annular shell 3 and a pair of rings 4, 5, wherein the ends of said shell (flanged ends) are embedded within said rings. A fair reading of Hellweg further suggests that the annular shell can be formed of metal (see Background of Hellweg). Hellweg, however, is silent as to the inclusion of notches in the ends of said annular shell. In any event, it is well known to include notches or slots at the marginal ends of a wide variety of components in order to, among other things, eliminate wrinkling. Schubert provides one example of such an arrangement in which notches are arranged at the marginal end portions of a similar flanged, metal component in order to prevent wrinkling and the buildup of stresses (Column 1). It is emphasized that the metal component of Schubert is extremely analogous to the annular shell of Hellweg in that both are curved or flanged metal components- the benefits of reduced wrinkling would be expected to result in the tire of Hellweg in view of Schubert. It is further noted that applicant similarly attributes the benefit of reduced wrinkling and reduced buildup of stresses due to the inclusion of notches. Absent any conclusive showing of unexpected results, one of ordinary skill in

the art at the time of the invention would have found it obvious to include notches in the curved tire component (annular shell) of Hellweg.

As to the ends of the annular shell, the figures of Hellweg generally depict said ends as being significantly embedded in the respective rings. Furthermore, one of ordinary skill in the art at the time of the invention would not have formed the assembly such that the end portions are flush with the surfaces of the ring (equivalent to 100% coverage). Thus, the general disclosure of Hellweg suggests a significant amount of embedding without completely extending over the width of said rings and such a disclosure appears to be consistent with the broad range of the claimed invention.

It is further noted, regarding the ends, that (a) Hellweg teaches that openings in said rings may be at least one of a circumferential opening, a curved-shaped opening, and a negative profile (Column 3, Lines 45+) and (b) Hellweg teaches that the structure including a positive and negative profile can be simplified and can be formed more or less solely in the form of an angle of the outer wall regions of the ring body and a corresponding receiver in the upper material layer (Column 10, Lines 1+). In view of this disclosure, one of ordinary skill in the art at the time of the invention would have found it obvious to form the rings with a horizontal opening, such that the ends of said shell would be axially oriented (such is consistent with the axially oriented flanges disclosed by Schubert). Also, in view of Schubert, the portions of the flange that extend beyond the dished areas (from the flange end to the dished portions) can be viewed as the "bent ends" and such portions have a uniform radial distance from a central axis.

Regarding the length of the notches, Schubert depicts the periodic inclusion of notches at the marginal end portions of a flanged, metal component. A fair reading of the reference suggests that the notches necessarily have some length and that said length is not significant as compared to the circumferential length of said tire component. One of ordinary skill in the art at the time of the invention would have readily appreciated the broad range of the claimed invention (between 1 and 15 mm) in view of the general disclosure noted above. It is emphasized that the notches are not included to define the predominant area of the end portions and thus, one of ordinary skill in the art at the time of the invention would have expected the notches to have a length in accordance to the claimed invention.

Also, with respect to the independent claim, Table 1 is not seen to provide a conclusive showing of unexpected results. In particular, one of ordinary skill in the art at the time of the invention would not have expected the notches to have a significant length and thus occupy a large area of the edge portions. It is evident that the notches must have some length and the results demonstrate, for example, that a relatively large notch length (17 mm) is not as effective as smaller lengths (although it is better than a "notchless" assembly- comparative example 1). Additionally, it is evident that an increase in notch length would result in a reduction in tire weight (less material). Lastly, it is emphasized that the reference generally depicts a significant degree of embedding without completely extending over the width of said rings and such a disclosure appears to be consistent with the broad range of the claimed invention.

Also, with respect to claims 1 and 3, one of ordinary skill in the art at the time of the invention would not have expected the area of the notches to occupy a significant area of the edge portions (periodically included)- such an arrangement is consistent with the claimed relationship between the length of the notch and the alignment pitch. Also, applicant has not provided a conclusive showing of unexpected results for either of the claimed relationships. Lastly, with respect to claim 3, the connecting portion of Hellweg necessarily has a radius of curvature and the claim defines a broad range of values without providing a conclusive showing of unexpected results.

As to claims 4 and 5, Hellweg appears to suggest the use of metal to form said annular shell. While the reference fails to expressly disclose the type of metal, stainless steel represents one of the most common metallic materials used in a wide variety of applications/components, including tire components. Furthermore, the claimed breaking strengths are consistent with stainless steel (inherent property- approximately 860 MPa). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the shell from a material having the claimed breaking strength.

Response to Arguments

3. Applicant's arguments filed July 10, 2009 have been fully considered but they are not persuasive.

Applicant argues that the inclusion of dished portions does not result in an assembly in which bent ends only extend in an axial direction at a uniform radial distance from a central axis. The examiner respectfully disagrees. As detailed above,

the "bent ends" can be viewed as the flange portions that extend from the end of the flange to the region adjacent the dished regions and such "bent ends" are positioned at a uniform radial distance from a hypothetical central axis. It is emphasized that applicant has not defined the "bent ends" in a manner that defines over the assembly of Hellweg in view of Schubert. It is further noted that such an assembly appears to be consistent with applicant's assembly- as depicted in Figure 3, the entire width of the "belt end" (Ws) is not at a uniform radial distance from a central axis (only that portion which is exactly horizontal can be viewed as the claimed "bent end" and this is the exact rationale used in the assembly of Schubert in which the region beyond the dished portions is exactly horizontal and can be viewed as the claimed "bent ends").

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin Fischer
/Justin R Fischer/
Primary Examiner, Art Unit 1791
November 10, 2009